

### SLOVENSKI STANDARD oSIST prEN ISO 4210-5:2022

01-januar-2022

## Kolesa - Varnostne zahteve za kolesa - 5. del: Preskusne metode za krmila (ISO/DIS 4210-5:2021)

Cycles - Safety requirements for bicycles - Part 5: Steering test methods (ISO/DIS 4210-5:2021)

Fahrräder - Sicherheitstechnische Anforderungen an Fahrräder - Teil 5: Prüfverfahren für die Lenkung (ISO/DIS 4210-5:2021) DARD PREVIEW

Cycles - Exigences de sécurité des bicyclettes - Partie 5. Méthodes d'essai de guidage (ISO/DIS 4210-5:2021)

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Ta slovenski standard je istoveten 2:7/osist prEN ISO 4210-5

<u>ICS:</u>

43.150

Kolesa

Cycles

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en,fr,de

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# DRAFT INTERNATIONAL STANDARD ISO/DIS 4210-5

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## Cycles — Safety requirements for bicycles —

# Part 5: **Steering test methods**

Cycles — Exigences de sécurité des bicyclettes — Partie 5: Méthodes d'essai de guidage

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### Contents

This template allows you to work with default MS Word functions and styles. You can use these if you want to maintain the Table of Contents automatically and apply auto-numbering.

To update the Table of Contents please select it and press "F9".

Introduction       v         1       Scope       1         2       Normative references       1         3       Terms and definitions       1         4       Test methods       1         4       Test methods       1         4.1       Handlebar grips and plugs       1         4.1.1       Freezing test       1         4.1.2       Hot water test       2         4.2       Handlebar stem — Lateral bending test       2         4.3       Handlebar stem — Forward bending test       3         4.4       Handlebar stem — Forward bending test       3         4.4.1       Test method for stage 1       5         4.4.2       Test method for stage 2       7         4.5       Handlebar stem — Torsional security test       7         4.6       Handlebar stem to fork steerer — Torsional security test       8         4.7       Bar end to handlebar — Torsional security test       8         4.8       Aerodynamic extensions to handlebar — Torsional security test       9         4.9       Handlebar and stem assembly — Fatigue test       9         4.9       Handlebar and stem assembly — Fatigue test       9         4.7       Test method except	Foreword	iv
1       Scope       1         2       Normative references       1         3       Terms and definitions       1         4       Test methods       1         4.1       Handlebar grips and plugs       1         4.1.1       Freezing test       1         4.1.2       Hot water test.       2         4.2       Handlebar stem — Lateral bending test       2         4.3       Handlebar and stem assembly — Lateral bending test       3         4.4       Handlebar stem — Forward bending test       5         4.4.1       Test method for stage 1       5         4.4.2       Test method for stage 2       7         4.5       Handlebar stem — Torsional security test       8         4.6       Handlebar stem to fork steerer — Torsional security test       8         4.7       Bar end to handlebar stem — Torsional security test       9         4.8       Aerodynamic extensions to handlebar — Torsional security test       9         4.9       Handlebar and stem assembly — Fatigue test       10         4.9.1       Test method except drop handlebar method except drop handlebar method scope security test       10	Introduction	v
2       Normative references       1         3       Terms and definitions       1         4       Test methods       1         4.1       Handlebar grips and plugs       1         4.1.1       Freezing test       1         4.1.2       Hot water test       2         4.2       Handlebar stem — Lateral bending test       2         4.3       Handlebar and stem assembly — Lateral bending test       3         4.4       Handlebar stem — Forward bending test       5         4.4.1       Test method for stage 1       5         4.4.2       Test method for stage 2       7         4.5       Handlebar stem — Forward bending test       7         4.4.1       Test method for stage 2       7         4.5       Handlebar stem — Torsional security test       8         4.7       Bar end to handlebar stem — Torsional security test       8         4.8       Aerodynamic extensions to handlebar <u>Torsional security test</u> 9         4.9       Handlebar and stem assembly <u>Torsional security test</u> 9         4.9       Handlebar and stem assembly <u>Torsional security test</u> 10         4.9       Handlebar and stem assembly <u>Torsional security test</u> 10         4.9	1 Scope	1
3       Terms and definitions       1         4       Test methods       1         4.1       Handlebar grips and plugs       1         4.1.1       Freezing test       1         4.1.1       Freezing test       1         4.1.2       Hot water test       2         4.2       Handlebar stem — Lateral bending test       2         4.3       Handlebar and stem assembly — Lateral bending test       3         4.4       Handlebar stem — Forward bending test       3         4.4       Handlebar stem — Forward bending test       5         4.4.1       Test method for stage 1       5         4.4.2       Test method for stage 2       7         4.5       Handlebar stem — Torsional security test       7         4.6       Handlebar stem to fork steerer — Torsional security test       8         4.7       Bar end to handlebar — Torsional security test       8         4.8       Aerodynamic extensions to handlebar — Torsional security test       9         4.9       Handlebar and stem assembly — Tartional security test       9         4.9       Test method except drop handlebar — previous except drop handlebar — 10       10         4.9.1       Test method except drop handlebar — previous except drop handlebar — 10	2 Normative references	
4       Test methods       1         4.1       Handlebar grips and plugs       1         4.1.1       Freezing test       1         4.1.1       Freezing test       1         4.1.1       Freezing test       1         4.1.2       Hot water test       2         4.2       Handlebar stem — Lateral bending test       2         4.3       Handlebar and stem assembly — Lateral bending test       3         4.4       Handlebar stem — Forward bending test       3         4.4       Test method for stage 1       5         4.4.1       Test method for stage 2       7         4.5       Handlebar stem — Torsional security test       7         4.5       Handlebar stem to fork steerer — Torsional security test       8         4.7       Bar end to handlebar — Torsional security test       8         4.8       Aerodynamic extensions to handlebar — Torsional security test       9         4.9       Handlebar and stem assembly — Fatigue test       10         4.9.1       Test method for drop handlebar       10         4.9.2       Test method for drop handlebar       10	3 Terms and definitions	1
4.1 Handlebar grips and plugs       1         4.1.1 Freezing test       1         4.1.2 Hot water test       2         4.2 Handlebar stem — Lateral bending test       2         4.3 Handlebar and stem assembly — Lateral bending test       3         4.4 Handlebar stem — Forward bending test       3         4.4 Handlebar stem — Forward bending test       5         4.4.1 Test method for stage 1       5         4.4.2 Test method for stage 2       7         4.5 Handlebar to handlebar stem — Torsional security test       7         4.6 Handlebar stem to fork steerer — Torsional security test       8         4.7 Bar end to handlebar — Torsional security test       8         4.8 Aerodynamic extensions to handlebar — Torsional security test       9         4.9 Handlebar and stem assembly — Fatigue test       10         4.9.1 Test method for drap handlebar       10         4.9.2 Test method for drap handlebar       10	4 Test methods	
4.1.1       Freezing test       1         4.1.2       Hot water test       2         4.2       Handlebar stem — Lateral bending test       2         4.3       Handlebar and stem assembly — Lateral bending test       3         4.4       Handlebar stem — Forward bending test       3         4.4       Handlebar stem — Forward bending test       5         4.4.1       Test method for stage 1       5         4.4.1       Test method for stage 2       7         4.5       Handlebar to handlebar stem — Torsional security test       7         4.6       Handlebar stem to fork steerer — Torsional security test       8         4.7       Bar end to handlebar — Torsional security test       8         4.8       Aerodynamic extensions to handlebar — Torsional security test       9         4.9       Handlebar and stem assembly — Fatigue test       10         4.9.1       Test method except drop handlebar — reminered to 5:2000       10         4.9.1       Test method for drop handlebar       10         4.9.1       Test method for drop handlebar       10	4.1 Handlebar grips and plugs	
4.1.2       Hot water test	4.1.1 Freezing test	
4.2 Handlebar stem — Lateral bending test.       2         4.3 Handlebar and stem assembly — Lateral bending test.       3         4.4 Handlebar stem — Forward bending test.       5         4.4.1 Test method for stage 1       5         4.4.2 Test method for stage 2       7         4.5 Handlebar to handlebar stem — Torsional security test       7         4.6 Handlebar stem to fork steerer — Torsional security test       8         4.7 Bar end to handlebar — Torsional security test       8         4.8 Aerodynamic extensions to handlebar — Torsional security test       9         4.9 Handlebar and stem assembly — Fatigue test       10         4.9.1 Test method except drop handlebar       10         4.9.2 Test method except drop handlebar       10	4.1.2 Hot water test	2
4.3 Handlebar and stem assembly — Lateral bending test.       3         4.4 Handlebar stem — Forward bending test.       5         4.4.1 Test method for stage 1       5         4.4.2 Test method for stage 2       7         4.5 Handlebar to handlebar stem — Torsional security test       7         4.6 Handlebar stem to fork steerer — Torsional security test       8         4.7 Bar end to handlebar — Torsional security test       8         4.8 Aerodynamic extensions to handlebar — Torsional security test       9         4.9 Handlebar and stem assembly — Fatigue test       10         4.9.1 Test method except drop handlebar       10         4.9.2 Test method for drop handlebar       10	4.2 Handlebar stem — Lateral bending test	2
4.4 Handlebar stem — Forward bending test	4.3 Handlebar and stem assembly — Lateral bending test	3
4.4.1       Test method for stage 1       5         4.4.2       Test method for stage 2       7         4.5       Handlebar to handlebar stem — Torsional security test       7         4.6       Handlebar stem to fork steerer — Torsional security test       8         4.7       Bar end to handlebar — Torsional security test       8         4.8       Aerodynamic extensions to handlebar — Torsional security test       9         4.9       Handlebar and stem assembly. Torsional security test       10         4.9.1       Test method except drop handlebar. premised 210 for 2022       10         4.9.2       Test method for drop handlebar.       10	4.4 Handlebar stem — Forward bending test	5
4.4.2       Test method for stage 2       7         4.5       Handlebar to handlebar stem — Torsional security test       7         4.6       Handlebar stem to fork steerer — Torsional security test       8         4.7       Bar end to handlebar — Torsional security test       8         4.8       Aerodynamic extensions to handlebar — Torsional security test       9         4.9       Handlebar and stem assembly — Fatigue test       10         4.9.1       Test method except drop handlebar — premised 210 50 2022       10         4.9.2       Test method for drop handlebar       12	4.4.1 Test method for stage 1	5
<ul> <li>4.5 Handlebar to handlebar stem — Torsional security test</li></ul>	4.4.2 Test method for stage 2	7
4.6 Handlebar stem to fork steerer — Torsional security test       8         4.7 Bar end to handlebar — Torsional security test       8         4.8 Aerodynamic extensions to handlebar — Torsional security test       9         4.9 Handlebar and stem assembly — Fatigue test       10         4.9.1 Test method except drop handlebar       10         4.0.2       Test method for drop handlebar	4.5 Handlebar to handlebar stem — Torsional security test	7
4.7 Bar end to handlebar — Torsional security test       8         4.8 Aerodynamic extensions to handlebar Torsional security test       9         4.9 Handlebar and stem assembly a Fatigue test       10         4.9.1 Test method except drop handlebar       10         4.0.2       Test method for drop handlebar	4.6 Handlebar stem to fork steerer Torsional security test	8
4.8 Aerodynamic extensions to handlebar Torsional security test	4.7 Bar end to handlebar — Torsional security test	
4.9 Handlebar and stem assembly — Fatigue test 10800996bd164312-8db5	4.8 Aerodynamic extensions to handlebar — Torsional security test	
4.9.1 Test method except drop handlebart premised 210-5-2022	4.9 Handlebar and stem assembly - Fatigue test accurate a stem assembly - Fatigue test accur	
4.0.2 Test method for dren headlaber 12	4.9.1 Test method except drop handlebar	
4.9.2 Test method for urop handledar	4.9.2 Test method for drop handlebar.	

### Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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This document was prepared by Technical Committee ISO/TC 149, *Cycles*, Subcommittee SC 1, *Cycles and* <u>oSIST prEN ISO 4210-5:2022</u>

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This second edition cancels and replaces the first edition (ISO 4210-5:2014), which has been technically revised.

The main changes compared to the previous edition are as follows:

- XXX XXXXXXX XXX XXXX

A list of all parts in the ISO 4210 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at <u>www.iso.org/members.html</u>.

### Introduction

This International Standard has been developed in response to demand throughout the world, and the aim has been to ensure that bicycles manufactured in compliance with this International Standard will be as safe as is practically possible. The tests have been designed to ensure the strength and durability of individual parts as well as of the bicycle as a whole, demanding high quality throughout and consideration of safety aspects from the design stage onwards.

The scope has been limited to safety considerations, and has specifically avoided standardization of components.

If the bicycle is to be used on public roads, national regulations apply.

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### DRAFT INTERNATIONAL STANDARD

## Cycles — Safety requirements for bicycles — Part 5: Steering test methods

### 3 **1 Scope**

4 This part of ISO 4210 specifies the steering test methods for ISO 4210-2.

### 5 2 Normative references

6 The following documents are referred to in the text in such a way that some or all of their content 7 constitutes requirements of this document. For dated references, only the edition cited applies. For 8 undated references, the latest edition of the referenced document (including any amendments) applies.

9 ISO 4210-1, Cycles — Safety requirements for bicycles — Part 1: Terms and definitions

10 ISO 4210-2, Cycles — Safety requirements for bicycles — Part 2: Requirements for city and trekking, young

11 adult, mountain and racing bicycles

12 ISO 4210-3, Cycles — Safety requirements for bicycles — Part 3: Common test methods

### 13 **3 Terms and definitions TANDARD PREVIEW**

- 14 For the purposes of this document, the terms and definitions given in ISO 4210-1 apply.
- 15 ISO and IEC maintain terminological databases for use in standardization at the following addresses:
- 16 ISO Online browsing platform; available at https://www.iso.org/obp\_h5\_
- 17 IEC Electropedia: available at http://www.electropedia.org/

### 18 4 Test methods

### 19 4.1 Handlebar grips and plugs

### 20 4.1.1 Freezing test

21 Immerse the handlebar, with handlebar grips or plugs fitted, in water at room temperature for 1 h and

22 then place the handlebar in a freezer until the handlebar is at a temperature lower than –5 °C. Remove

- 23 the handlebar from the freezer and allow the temperature of the handlebar to reach -5 °C, and then apply
- a force of 70 N to the grip or plug in the loosening direction as shown in Figure 1. Maintain the force until
- the temperature of the handlebar has reached +5 °C. It shall be permitted to create a hole in the plug to allow for the testing fixture to be fitted so long as the hole does not affect the seat of the plug in the
- 27 handlebar and the fixture does not contact the handlebar during the test.
- 28 Temperature is measured on the handlebar 3 cm from the grip towards the centre of the handlebar.



### 2 handlebar

Kev

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29 30

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32

- 3 drawing attachment
- 4 hooking ring
- 5 clearance

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NOTE The hooking ring can be divided rds.iteh.ai/catalog/standards/sist/b98d098f-bd1f-431a-8db5-

Figure 1 — Example of handlebar grip drawing attachment

### 33 **4.1.2 Hot water test**

Immerse the handlebar, with handlebar grips fitted, in hot water of  $+60 \degree C \pm 2 \degree C$  for 1 h. Remove the handlebar from the hot water, allow the handlebar to stabilize at ambient temperature for 30 min, and apply a force of 100 N to the grip in the loosening direction as shown in Figure 1. Maintain this force for 1 min.

### 38 **4.2 Handlebar stem — Lateral bending test**

For stems which have a quill for insertion into a fork steerer, clamp the quill securely in a fixture to the minimum insertion depth as specified in ISO 4210-2, 4.7.3, or for stem extensions which clamp directly on to an extended fork steerer, attach the extension to a fork steerer according to the manufacturer's instructions and clamp this fork steerer securely in a fixture to the appropriate height. Assemble a straight test bar to the stem, and apply a force of  $F_1$  at a distance of *d* laterally from the axis of the stem as shown in Table 1 and Figure 2. Maintain this force for 1 min.

Table 1 — Forces and	distances on handlebars
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Bicycle type	City and trekking bicycles	Young adult bicycles	Mountain bicycles	Racing bicycles
Force, F <sub>1</sub> N	600	600	1 000	1 000
Distance, d mm	300	300	300	230



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#### 4.3 Handlebar and stem assembly T Lateral bending test 49

Assemble the handlebar and stem in accordance with the manufacturer's instructions. Align the grips 50 51 portion of the handlebar in a plane perpendicular to the steerer axis [see Figure 3 a) or Figure 4 a) ]. If perpendicular alignment is not achievable within the manufacturer's recommended range, then the 52 alignment shall be as close as possible. If perpendicular alignment is achievable in multiple positions, or 53 54 for stems with adjustable length or angle, fix the stem and handlebar in positions resulting in the 55 maximum bending moment with respect to the steerer axis. For permanently connected handlebar and 56 stem, e.g. by welding or brazing, install per manufacture's instructions. For stems which have a quill for 57 insertion into a fork steerer, clamp the quill securely in a fixture to the minimum insertion depth, or for 58 stem extensions which clamp directly on to an extended fork steerer, attach the extension to a fork steerer 59 according to the manufacturer's instructions and clamp this fork steerer securely in a fixture to the 60 appropriate height. Apply a force of  $F_2$  (see Table 2) at a distance of 50 mm from the free end of the handlebar and parallel to the axis of the fork steerer as shown in Figure 3 or Figure 4. Maintain this force 61 for 1 min.

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### Table 2 — Forces on handlebars

Forces in newtons

Bicycle type	City and trekking bicycles	Young adult bicycles	Mountain bicycles	Racing bicycles
Force, F <sub>2</sub>	600	600	1 000	1 000

65